

Response on Referee's third round review

First of all, we want to thank you for accomplishing another round of reviewing this work of me and my co-authors and your hard work during the review process. In the following, I will go through and respond to your final comments. Please note that reviewer comments are in *italic*, our responses in normal font and an explanation of changes/adaptations made by us in blue font.

Comments

- *Line 165: "but resetting all variables that would be dynamically predicted within the same function". I do not think this is clear about the steps taken. I assume this is meant to clarify that, in the static runs, it is only GPP and NEE that are modified and that the rest of the model remains in its static configuration?*

Yes, you are right. The intention of that sentence was to confirm that we assured to keep the static setup as it was.

Changed to "... but resetting all variables that would be dynamically predicted within the same function to their prior values. This assured that the model still ran in static configuration" (Line 159-161).

- *Line 195: "The Noah-MP simulations were done with soil parametrization from look-up tables, Ball-Berry stomatal resistance approach with using matric potential". Please correct the grammar in this sentence to make the implementation clear.*

Adapted to "The Noah-MP simulations were done with soil parameterization from look-up tables and Ball-Berry stomatal resistance approach (Ball et al., 1987; Bonan, 1996) using a matric potential limitation" (Line 190-191).

- *Table 2: This detail is good but should likely be in Supplementary Information. If it is included for Noah-MP, consistency would suggest the same information be supplied in the same table for ECLand.*

Creating the same sort of table for ECLand is difficult since there is no option to choose from different approaches for processes, rather just switching them on or off.

We listed the used options for ECLand processes now as well in a table. Both tables are now in the appendix (Tab. A1 and A2).

- *Line 317: "lowered from -32 % - +69 % to -28 % - +42 %" is confusing to read with the hyphens and minus signs. I would suggest something like "lowered from between -32 % and +69 % to between -28 % and +42 %".*

Done.